SUSLIK, Vojtech, inz.

Damage caused to the forests by the spread of small rodents in the years 1959-1960. Les cas 9 no.8:749-760 Ag '63.

1. Vyskumny ustav lesneho hospodarstva, Banska Stiavnica.

KADEYKIN, V.A., dots.; SOKOLOV, V.D., dots.; DRUZHININ, A.S., kand. ist. nauk; SUSLIKOV, A.A., st. prep.

[Reports and papers of the Scientific Conference on the Subject "Expanding socialist competition in the coal industry of the Kuznetsk Basin"] Doklady i soobshcheniia Nauchnoi konferentsii na temu "Razvitie sotsialisticheskogo sorevnovaniia v ugol'noi promyshlennosti Kuzbassa." Kemerovo, Kemerovskii gornyi in-t, 1962. 113 p. (MIRA 17:7)

1. Nauchnaya konferentsiya na temu "Razvitiye sotsialisticheskogo sorevnovaniya v ugol'noy promyshlennosti Kuzbassa.

LITVINENKO, G.Kh.; SUSLIKOV, A.D.

Mechanication and automatization of operations in coke-oven sections. Koks i khim. no.7:33-36 '60. (MIRA 13:7)

1. Magnitogorsk metallurgicheskiy kombinat.
(Coke industry--Equipment and supplies)

LITVINENKO, G.Kh.; BULLYKOV, L.D.

Device for signaling the opening of coke wharf gates and the presence of coke on the wharf. Biul. TSIICHM (MIRA 14:10)
no.5:49 '61.

(Coke ovens)
(Automatic control)

LITVINENKO, G.Kh.; SUSLIKOV, A.D.; GARAN', F.A.

Automation of coke sorting and distribution. Koks i khim. no.6: 27-31 '63. (MIRA 16:9)

1. Magnitogorskiy metallurgicheskiy kombinat. (Coke industry) (Automation)

1. SUSLIKOV, F., Eng.

2. USSR (600)

4. Milking Machines

7. How to repair the cylinder pump of a milking machine, MTS 13 No. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

SUSLIKOV, G.F.

3(5) PHASE I BOOK EXPLOITATION SOV/2154

Akademiya nauk SSSR. Vostochno-Sibirskiy filial

Syr'yevyye resursy legkikh metallov Vostochnoy Sibiri, tom. 2(Light Metal Resources of Eastern Siberia, Vol 2) Moscow, 1958. 298 p. (Series: Its: Trudy, vyp. 13) 1,200 copies printed.

Editorial Board: N.S. Alekseyev, Ye. P. Bessolitsyn, V.S. Brachev, A.F. Li, Doctor of Geological and Mineral Sciences, and Ye. I. Khasanov (Resp. Ed.) Candidate of Technical Sciences; Ed. of Publishing House: V.K. Shlepov; Tech. Ed.: P.S. Kashina.

PURPOSE: This issue of the Eastern Siberian Branch Transactions is of interest to structural, exploration and mining geologists, mineralogists, and metallurgists in the light metal industries.

COVERAGE: This collection of articles is a compilation of the reports presented at the third coordinated conference on "The Creation of a Light Metals Industry in Eastern Siberia Based on Local Ores" organized by the Laboratory of Electrometallurgy of the Eastern Siberian Branch of the AN SSSR in October, 1956. It met for the purpose of promoting coordination between the activities of the power generation combines and the fast developing light metals industry of Eastern Siberia. The reports indicate that large aluminum and titanium-magnesium combines are being constructed in the Krasnoyarsk Kray and the Irkutsk Oblast These areas provide the cheapest sources of coal and electrical energy. Individual articles also report on the following subjects: general questions in the development of the light metals industry in Eastern Siberia, sillimanite ores, nepheline syenites, bauxites, magnesium ores, etc. References accompany each article.

(23)

SOV/137-59-3-5202

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 38 (USSR)

AUTHORS: Gerasimov, A. G., Suslikov, G. F., Tatsiyenko, P. A.

TITLE: On the Utilization of Iron Ores of the Nizhne-Angarskiy Ore Body (K voprosu ob ispol'zovanii zheleznykh rud Nizhne-Angarskogo mestorozhdeniya)

PERIODICAL: Tekn.-ekon. byul. Sovnarkhoz Krasnoyarskogo ekon. adm. r-na, 1958, Nr 2, pp 12-15

ABSTRACT: The final results of concentration of ore by the gravitation-flotation and magnetic-roasting methods under laboratory conditions are adduced. The calculations performed serve to substantiate the proposed immediate exploitation of the Nizhne-Angarskiy iron-ore body.

M. M.

Card 1/1

SOV-127-58-9-10/20

AUTHORS: Gerasimov, A.G., Suslikov, G.F., Tatsiyenko, P.A. and Medvedkov, V.I.

TITLE: New Data on the Concentration of Iron Ores of the Nizhnyaya Angara Deposits (Novyye dannyye po obogashcheniyu zheleznykh rud Nizhne-Angarskogo mestorozhdeniya)

PERIODICAL: Gornyy zhurnal, 1958, Nr 9, pp 56-62 (USSR)

ABSTRACT: Data on the concentration processes of the Nizhnyaya Angara iron ore deposits have been collected and studied during the last 10 years by the Instituty Mekhanobr, Uralmekhanobr i Sibirskiy metallurgicheskiy institut (The Mekhanobr, Uralmekhanobr Institutes and the Siberian Metallurgical Institute) and as a result two rational methods of concentration have been proposed: gravity-flotation and magnetic-roasting methods. Comparative results are shown in table 1. After technical and economical calculations, the Mekhanobr, represented by N.P. Titkov, I.N. Kachan, G.I. Yudenich, Z.S. Bogdanova, V.F. Savel'yev, Engineer Ruchkin and D.I. Frantsuzov, recommended the gravity-flotation method. Although these findings were confirmed by laboratory tests conducted in the Krasnoyarsk Plant Sibelektrostal' by V.D. Kosul'nikov, V.S. Tomilin, A.M. Komlev, A.D. Komleva,

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New Data on the Concentration of Iron Ores of the Nizhnyaya Angara Deposits

M.G. Kurochkin, N.S. Kosul'nikova, A.S. Kozhevnikov, S.M. Luk'yanov, V.B. Lutsiyan, V.V. Makarov, D.Ye. Necheporenko, and G.L. Suslikova in 1957-58, they also found the possibility of obtaining much better results of the concentration by the magnetic-roasting method. According to their findings, the optimum degree of reduction of roasted ore is in the 120-150 % range, as compared with 83-102 % findings of the Mekhanobr (Fig. 1). Research on various reducers showed that the best results of reducing were obtained when coal was used as fuel. Its use allowed the necessary degree of reduction to be obtained at a temperature of 650-700°, which must have been much higher when gas was used as a fuel. As the Krasnoyarsk region has huge reserves of brown coal, it was decided to use only the magnetic-roasting method. Brown coal consumption amounted to 8.1 % of the processed ore on the average. The low cost of brown coal makes this method highly profitable. The crushed ore of class minus 12 mm was subjected to the magnetic-roasting process; after that it was divided into two classes of plus 2 mm and minus 2 mm. The ore of class plus 2 mm was then subjected to the dry magnetic separation and the obtained concentration, together with ore of class minus 2 mm,

New Data on the Concentration of Iron Ores of the Nizhnyaya Angara Deposits

was again subjected to wet magnetic separation. Further concentration operations were continued, according to two schemes elaborated by the Mekhanobr Institute (Fig. 2) and the Sibelektrostal' Plant (Fig. 3). Best results were obtained with ores reduced by 120-150 % (Table 3). After testing the obtained concentrates with various iron ores of the Nizhnyaya Angara deposits, the Sibelektrostal' Plant proposed a general method of concentration for all ores of the region. The cost of cast iron obtained from the concentrates (Table 7) of ores of the Nizhnyaya Angara deposits is, after the Magnitogorsk cast iron, the lowest in the Union.
There is 1 graph, 7 tables and 5 schemes.

ASSOCIATION: Krasnoyarskiy zavod Sibelektrostal (The Krasnoyarsk Sibelektrostal' Plant); Krasnoyarskoye geologicheskoye upravleniye (The Krasnoyarsk Geological Administration)

1. Iron ores--Processing

SUSLIKOV, G.F.; REVENKO, Z.F.; KOMLEV, A.M.

Pilot-plant testing of Uzhur nephelines to be dressed. Trudy Vost.-Sib. fil. AN SSSR no.13:125-133 '58. (MIRA 12:12)

1.Krasnoyarskiy metallurgicheskiy zavod Sibelektrostal.
(Uzhur region (Kuznetsk Ala-Tau)--Nephelite))
(Ore dressing)

TYURENKOV, N.G.; BUCHEL'NIKOV, S.M.; SUSLIKOV, G.F.

Industrial testing of Kachkanar deposit titanium-magnetite ores. Trudy Uralmekhanobra no.5:58-73 '59. (MIRA 15:1)

1. Ural'skiy nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki poleznykh iskopayemykh (for Tyurenkov). 2. Ural'skiy filial Akademii nauk (for Buchel'nikov). 3. Zavod "Sibelektrostal'" (for Suslikov).
(Kachkanar Mountain--Iron ores)

SUSLIKOV, G.F.; KOROCHKIN, M.D.; YUR'YEVA, N.A.

Experimental treatment of the Satka deposit magnesites in heavy suspensions. Ogneupory 31 no.1:26-30 '66. (MIRA 19:1)

1. Krasnoyarskiy metallurgicheskiy zavod "Sibelektrostal'."

SUSLIKOV, I., arkhitektor; MIRONKOV, B., inzh.

Reinforced cement roofs. Stroitel' no.11:26-27 N '59.
(MIRA 13:3)

(Roofs, Concrete)

VASILENKO, O.V.; MIRONKOV, B.A.; SUSLIKOV, I.P.; MOROZOV, A.P., red.
REYZ, M.B., red.; ROZOV, L.K., tekhn. red.

[New thin-walled elements: meshreinforced concrete] Novye tonkostennye konstruktsii: armotsement. Pod red. A.P.Morozova. Leningrad, Gosstroiizdat, 1961. 127 p. (MIRA 15:5)

1. Akademiya stroitel'stva i arkhitektury SSSR. Leningradskiy filial. 2. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Morozova).
(Precast concrete construction)

YELISEYEV, Yu.A., inzh.; MIRONKOV, B.A., inzh.; SUSLIKOV, I.P., arkhitektor

Mesh-reinforced concrete elements in building practice. Bet. i zhel.-bet. no.9:392-394 S '61. (MIRA 14:10)
(Precast concrete construction)

SUSLIKOV, P. I.

Viticulture

On the "Su-Psekh" State Farm.
Vin. SSSR 12 No. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, December, 1952. UNCLASSIFIED.

SUSLIKOV, V.

Financial planning in industrial establishments. Fin. SSSR 18 no.4: 38-41 Ap '57. (MLRA 10:6)
(Industrial management)

SUSLIKOV, V.; IVANOV, M.; BAKHAREV, V.; GLOYEVA, K.

Improve the training of specialists for State Bank institutions.
Den.i kred. 17 no.1:54-65 Ja '59. (MIRA 12:4)
(Finance--Study and teaching)

SAMADELASHVILI, G.; SUSLIKOV, V.

Issuding credit for new machinery. Den. i kred. 19 no.3:65-70 Mr '61. (MIRA 14:3)
(Credit) (Georgia--Textile machinery)
(Saratov Province--Machinery in industry)

SHAPIRO, N.I.; NENAROKOVA, I.F.; SUSLIKOV, V.I.

Radiobiological analysis of the relationship between the inactivation of Escherichia coli and the dose of X irradiation. Biofizika 4 no.5:559-566 '59. (MIRA 14:6)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(ESCHERICHIA COLI) (X RAYS—PHYSIOLOGICAL EFFECT)

SHAPIRO, N.I.; STRASHNENKO, S.I.; PLOTNIKOVA, Ye.D.; SUSLIKOV, V.I.

Comparative estimation of the damaging effect of ionizing radiation on heredity in mice and drosophilae. Zhur.ob.biol. 21 no.2:104-112 Mr-Ap '60. (MIRA 13:6)

1. U.S.S.R. Academy of Medical Sciences and Institute of Biological Physics, U.S.S.R. Academy of Sciences.
(X RAYS--PHYSIOLOGICAL EFFECT) (HEREDITY)

SUSLIKOV, V.I. (Moscow)

"The Use of the Methods of Parametric and Nonparametric Statistics with Samples of Small Volume"

Report presented at the 3rd Conference on the use of Mathematics in Biology, Leningrad University, 23-28 Jan. 1961.
(Primeneniye matematicheskikh Metodov v Biologii. II, Leningrad, 1963 pp 5-11)

SHAPIRO, N.I.; PLOTNIKOVA, Ye.D.; STRASHNENKO, S.I.; SUSLIKOV, V.I.

Relative genetic radiosensitivity in different mammal species.
Radiobiologiia 1 no.1:93-103 '61. (MIRA 14:7)

1. Akademiya meditsinskikh nauk SSSR i Institut biologicheskoy fiziki AN SSSR, Moskva.
(X RAYS--PHYSIOLOGICAL EFFECT)

42684

S/747/62/000/000/005/025
D268/D307

27122.0

AUTHORS: Shapiro, N. I., Plotnikova, Ye. D., Strashnenko, S. I. and Suslikov, V. I.

TITLE: Comparative genetic radiosensitivity in different species of mammals

SOURCE: Radiatsionnaya genetika; sbornik rabot. Otd. biol. nauk AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 63-78

TEXT: To provide data on the rate of induced mutations, with dominant lethals taken as the indicators of genetic changes, the gonads in 2 1/2 - 4 month-old male mice were irradiated with x rays at 134, 268, 402 and 670 r, those in rats at the same dose and 804 r, and those in 5 - 8 month-old chinchilla rabbits at 150, 300, 450, 600 and 750 r. The mice and rats were subsequently mated with females of their own age, being kept together for 3 days, and the females were slaughtered on the 14 - 16th day of pregnancy. After mating, the female rabbits were slaughtered on the 20th day of pregnancy. In all 3 species the numbers of yellow bodies, implantation sites

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Comparative genetic radiosensitivity...

and embryos were assessed to establish the number of embryos killed and the stage at which this occurred. Since the embryos derived from crosses in the 5 days following irradiation of the males, the killing of the embryos was due to dominant lethals developed in the spermatozoids of the irradiated animals. The data on the rate of development of dominant lethals in the spermatozoids of the species studied showed genetic radiosensitivity to be highest in rabbits and lowest in mice. It was established that in most cases the dominant lethals induced in rabbits killed the embryos before implantation of the testis, whereas in most cases in mice and rats they were killed subsequently. There are 4 figures and 5 tables.

ASSOCIATION: Akademiya meditsinskikh nauk SSSR (Academy of Medical Sciences USSR) and Institut biologicheskoy fiziki AN SSSR, Moskva (Institute of Biological Physics, AS USSR, Moscow)

42685

S/747/62/000/000/006/025
D268/D307

AUTHORS: Shapiro, N. I., Strashnenko, S. I., Plotnikova, Ye. D. and Suslikov, V. I.

TITLE: A comparative assessment of the injurious effect of ionizing radiation on heredity in mouse and Drosophila

SOURCE: Radiatsionnaya genetika; sbornik rabot. Otd. biol. nauk AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 79-90

TEXT: The rate of the formation of dominant lethals was used as an indicator of the effect of radiation. Gonads in 2 1/2 - 4 month-old male mice were irradiated with x rays at 134, 268, 402 and 670 r, followed by mating with 2 females for 3 days. On the 14-16th day of pregnancy these were opened and the number of yellow bodies, implantation sites and embryos assessed. Embryos killed both before and after implantation were determined, due to dominant lethals in the spermatozoids or the irradiated males. Similar data for maximum and minimum radiosensitivity in different lines of Drosophila melanogaster were used from previous studies by N. I. Shapiro et

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al. (Dokl. AN SSSR, 1947, 58, no. 8, 1785-1788). Comparison of the rates of the formation of dominant lethals in mice and D. melanogaster by 3 methods which are described showed that: 1) mice were an average of 5 - 7 times; 2) an average of 6 - 8 times; and 3) an average of 6 - 9 times more radioactive. It is therefore concluded that mice are 5 - 9 more radiosensitive than D. melanogaster. The rate of the formation of dominant lethals in both subjects was proportional to the total chromosome measurements, that in mice being 9 times higher. There are 2 figures and 5 tables.

ASSOCIATION: Akademiya meditsinskikh nauk SSSR (Academy of Medical Sciences USSR) and Institut biologicheskoy fiziki AN SSSR, Moskva (Institute of Biological Physics AS USSR, Moscow)

41578
S/020/62/146/004/015/015
B144/B186

27.2470

AUTHORS: Sondak, V. A., Gracheva, Ye. P., Gladyshev, B. N., Suslikov, V. I.

TITLE: Protective effect of phytolipopolysaccharides and BG -2 (VB-2) under the action of radiation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 4, 1962, 925-928

TEXT: The effect of a nonfibrinolytic phytolipopolysaccharide (PLP) from tea leaves was studied on white rats irradiated with a total dose of 700 r (Co^{60}). The PLP was administered either alone or combined with the polyvinylbutyl ester preparation VB-2 (m.w.6000; n_D^{20} 1.4600) subcutaneously by 4 injections of 100-50 γ, 96, 72, 48, and 24 hrs before irradiation. VB-2 was administered for the first time 24 hrs after irradiation and then orally every day during the entire observation period of 30 days. The effect of the two preparations was examined by determining hemoglobin and by erythrocyte, leukocyte, differential blood count, reticulocyte and thrombocyte counts. The results were statistically evaluated and compared with the values obtained from controls which

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Protective effect of ...

had only been irradiated. For the PLP animals the death rate of the controls of 62.0 ± 6.86 decreased to 26.0 ± 9.15, and for the PLP + VB-2 animals to 23.0 ± 11.63. Detailed blood examinations showed that, at all stages, the hemoglobin content and the erythrocyte, reticulocyte, and thrombocyte counts were higher than those of the controls. With combined treatment the protective effect was higher than with administration of PLP only. The white blood count was not influenced essentially. Unlike the bacterial lipopolysaccharides, PLP therefore is suitable as a radiation blocker. There are 2 figures and 3 tables.

ASSOCIATION: Institut biologicheskoy fiziki Akademii nauk SSSR (Institute of Biological Physics of the Academy of Sciences USSR) Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

PRESENTED: April 13, 1962, by A. I. Oparin, Academician

SUBMITTED: April 12, 1962

Card 2/2

SUSLIKOV, V.I.

Characteristics of changes in the effectiveness of some protective substances in case of different radiation doses. Radiobiologiia 3 no.2:247-255 '63 (MIRA 17:1)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

L 20271-65 AMD Pb-4
ACCESSION NR: AR4045868 S/0299/64/000/014/M024/M024

SOURCE: Ref. zh. Biologiya. Svodny*y tom, Abs. 14M157

AUTHOR: Lapchinskiy, A. G.; Medvedeva, G. V.; Gadalina, I. D.; Suslikov, V. I.; Eyngorn, A. G.

TITLE: Skin and mammary gland homoplasty with parabiosis of donor and recipient in rats

CITED SOURCE: Sb. 3 Vses. konferentsiya po peresadke tkaney i organov, 1963. Yerevan, 1963, 365-367

TOPIC TAGS: skin, mammary gland, homoplasty, parabiosis, rat, hyperplasia, transplantation

TRANSLATION: Parabiosis in young rats leads to the development of tolerance between partners according to data of Lapchinskiy and Savandt. In some of the experiments nonrelated rats taken from different vivariums were joined in parabiosis by forming a skin or skin-muscle bridge between the partners. A flap from the back of one of the rats served as a transplant on the partner's stomach, and a

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ACCESSION NR: AR4045868

flap from the latter's stomach served as a transplant on the back of the other rat. The difficulty of forming parabiosis in adult rats (because they constantly try to separate themselves from one another) and the seriousness of the operation led to a high percentage of postoperative deaths. Many rats died on the 14th to 15th days. Hyperplasia of the spleen and lymph nodes was found in the dead animals. However, the reason for sloughing off of transplant and death of animal could not always be found: perhaps it could be incompatibility of tissues or infection. Only 7 pairs of rats lived more than 20 days in parabiosis. In some of these a gradual crowding out of the transplant by the recipient's own tissues was found. Maximum life expectancy of rats in parabiosis is 6 mos. In one case when one partner died, the homotransplant on the back of the other partner remained intact. This transplant contained a mammary gland which 7 mos after transplantation secreted a small quantity of milk.

SUB CODE: LS ENCL: 00

Card 2/2

L 12931-63 EWT(1)/EWT(m)/BDS ASD/AFFTC AR/K

ACCESSION NR: AP3003937 S/0205/63/003/004/0587/0594

58
56

AUTHOR: Sondak, V. A.; Gracheva, Ye. P.; Glady*shev, B. N.; Suslikov, V. I.

TITLE: Effect of phytolipopolysaccharides and preparation VB-2 on the hemogenesis of irradiated animals 19

SOURCE: Radiobiologiya, v. 3, no. 4, 1963, 587-594

TOPIC TAGS: radiation sickness, antiradiation preparation, polysaccharide, phytolipopolysaccharide, VB-2, hemogenesis, vinylbutyl ether polymer

ABSTRACT: Lipopolysaccharides from the leaves of Vitis vinifera and Thea sinensis have been tested on white male rats for their antiradiation qualities. The phytolipopolysaccharides used did not have the ability to stimulate fibrinolysis. To protect the intestinal mucosa from radiation damage, a VB-2 preparation (polymer of vinylbutyl ether) was applied. An M-2 computer was employed to tabulate statistical results. It was concluded that 1) phytolipopolysaccharides applied before irradiation possess definite prophylactic properties and when used in conjunction with a VB-2 preparation exert some protective function after irradiation; 2) a positive influence from these preparations was also manifested in the

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L 12931-63
ACCESSION NR: AP3003937

2

blood — dynamic changes of erythrocytes, reticulocytes, and thrombocytes after irradiation were more favorable in the animals treated with phytolipopolysaccharides and VB-2; 3) phytolipopolysaccharides, unlike bacterial lipopolysaccharides, exert a protective influence on hemogenesis against penetrating radiation, stimulating erythro-thrombocytopoiesis without any persistent and pronounced change in cells of the leucocytic order. Orig. art. has: 2 tables and 1 figure.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR (Institute of Biological Physics, AN SSSR); Institut organicheskoy khimii im. N. D. Zelinskogo AN SSSR, Moscow (Institute of Organic Chemistry, AN SSSR)

SUBMITTED: 11Jan63 DATE ACQ: 15Aug63 ENCL: 00

SUB CODE: AM NO REF SOV: 005 OTHER: 007

Card 2/2

SHOLIKOV, V.I.

Protective action of diethylstilbestrol. Radiobiologiia 3 no. 6:880-890 '63. (MIRA 17:7)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

SUSLIKOV, V.I.

Discovery of a mechanism of radiation effect on living objects by studying the dynamics of reparation processes. Radiobiologiia 5 no.1:49-56 '65. (MIRA 18:3)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

ACC NR: AT6030608 SOURCE CODE: UR/0000/66/000/000/0356/0357

AUTHOR: Suslikov, V. I.

ORG: none

TITLE: Decreased effectiveness of chemical protection against smaller radiation doses /Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966/

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 356-357

TOPIC TAGS: radiation protection, cosmic radiation biologic effect, pharmacology, space medicine

ABSTRACT:

The ineffectiveness of radioprotective substances during either chronic or fractionated irradiation of animals with doses of marginal lethality is still unexplained. This phenomenon could be connected with the decreased effectiveness of protection which accompanies decrease in the degree of injury from a single irradiation. The ineffectiveness of antiradiation agents with low lethal radiation doses has been experimentally confirmed for two

Card 1/3

important radioprotectors, diethylstilbestrol and AET (S-β-aminoethyl isothiuronium bromide hydrobromide). This study dealt with cystaphos; or AETP (monosodium salt of aminoethylthiophosphoric acid). Diethylstilbestrol, on one hand, and AET—AETP on the other are examples of two promising classes of radioprotectors for mammals.

The phenomenon of decreased effectiveness of mammal protection with lowering of the lethal radiation dose can be considered a general radiobiological principle. A possible cause of this phenomenon could be the toxicity of chemical radioprotectors for nonirradiated animals, and the increased sensitivity of irradiated animals to the toxic effect of these substances. This assumption can be considered proved for AET, since lowering the dose of AET nearly eliminated the decrease in protection usually observed with

L 08010-67
ACC NR: AT6036668

lowering of the lethal radiation dose.

Cystaphos has previously been considered completely nontoxic, when administered in a dose comparable to AET. Therefore, the fact that the protective effect of this nontoxic chemical also decreases as the radiation dose drops shows the need for other explanations for the phenomenon. Furthermore, the authors proved that cystaphos is mildly toxic, and completely ineffective as a radioprotector with radiation doses close to the minimum lethal dose. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3

SUSLIKOV, V.T.

A transistorized audio level indicating devices. Trudy VNAIZ no.9:135-137 '61. (MIRA 15:9)
(Sound--Measurement)

SUSLIKOVA, A.K.

Antianemic diet in certain types of anemia. Vop. pit. 20 no. 1:29-35 Ja-F '61. (MIRA 14:2)

1. Iz kafedry gospital'noy terapii (zav. - dots. I.G. Chernetsov) Kurskogo meditsinskogo instituta.
(ANEMIA) (DIET IN DISEASE)

MATOSYANTS, A.I.; SUSLIKOVA, A.K.; SKRIPNIK, L.S.

Case of periarteritis nodosa with primary pulmonary localization of the process. Vrach. delo no.5:140-141 My '62. (MIRA 15:6)

1. Kafedra gospital'noy terapii (zav. - doktor med. nauk A.I. Matosyants) Kurskogo meditsinskogo instituta i patologoanatomicheskoye otdeleniye (nauchnyy rukovoditel' - prof. A.S. Blumberg) Kurskoy oblastnoy klinicheskoy bol'nitsy.
(ARTERIES—DISEASES) (LUNGS—DISEASES)

SUSLIKOVA, A.K.

Aortic coarctation with a patent ductus arteriosus. Vrach. delo no.3:128-129 Mr '64. (MIRA 17:4)

1. Kafedra gospital'noy terapii (zav. - prof. A.I.Matosyants) Kurskogo meditsinskogo instituta.

BIRYUK, Vladimir Sergeyevich; ABRAMOVICH, I.F., doktor tekhn. nauk, prof., retsenzent; SUSLIN, A.I., kand. tekhn. nauk, retsenzent; ALYAMOVSKIY, M.I., nauchn. red.

[Smoke abatement in seagoing ships] Bor'ba s zadymleniem morskikh sudov. Leningrad, Sudostroenie, 1964. 269 p. (MIRA 18:2)

ANTONOV, E.I., inzh.; SUSLIN, A.M., inzh.

Automation of the recirculation operation of 57s-10 feed pumps.
Energetik no.9:7-9 S '64. (MIRA 17:10)

SUSLIN, I.

For old and new residents. Mest.prom.i khud.promys. 3 no.2:10-12 F '62. (MIRA 15:2)

1. Glavnyy spetsialist upravleniya mebel'noy derevoobrabatyvayushchey i toplivnoy promshlennosti Gosmestproma RSFSR.
(Furniture industry)

SUSLIN, M.S.

Manufacture of beams with two sloping surfaces and a span of 18 m.
Bet. i zhel.-bet. no.9:412-414 S '61. (MIRA 14:10)

1. Zamestitel' glavnogo tekhnologa Bereznikovskogo zavoda zhelezobetonnykh konstruktsiy No.4.
(Beams and girders)

SUSLIN, P.

SUSLIN, P.

Iron Industry

Accentuation of conflicts on the ferrous metal market in the capitalist countries. Vnesh. torg. 22 no. 6. '52.

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED.

SUSLIN, Petr Nikolayevich; KISELEV, A.A., redakter; VIGANT, Ya.Ya., tekhnicheskiy redakter.

[Ferrous metals; the market in capitalist countries] Chernye metally; rynok kapitalisticheskikh stran. Moskva, Vneshtorgizdat, 1956. 222 p. (MLRA 9:4)
(Iron) (Steel) (Iron ores)

SUSLIN, P.

Markets of ferrous metals. Vnesh.torg. 26 no.4:14-19 Ap '56. (MLRA 9:8)

(Iron industry) (Steel industry)

SUSLIN, Petr Nikolayevich; ALEKSEYEV, A.M., red.; SHLENSKAYA, V.A., red. izd-va; PAVLOVSKIY, A.A., tekhn. red.

["Common market" of six European countries] "Obshchii rynok" shesti evropeiskikh stran. Moskva, Vneshtorgizdat, 1961. 287 p. (MIRA 14:6)

(European common market)

SUSLIN, Petr Nikolayevich; PISKOPEL', F.G., prof., red.

[The economy and foreign trade of African countries] Ekonomika i vneshniaia torgovlia stran Afriki. Moskva, Vneshtorgizdat, 1964. 291 p. (MIRA 17:5)

SUSLIN, P. P.

Harbor electricians. Moskva, Morskoi transport, 1945. 135 p. (V pomoshch' novym kadram morskogo flota, 29) (51-16650)

TK146. S85

SUSLIN, P. P.

Ships' electricians. Moskva, Morskoi transport, 1945. 142 p. (V pomoshch' novym kadram morskogo flota, 34) (51-16903)

VM479.S8

[illegible], I. I.

Posobie dlia sudovogo elektrika [Manual for the ship electrician]. Moskva, Morskoi transport, 1952. 320 p.

SO: Monthly List of Russian Accessions, Vol. 6 No 10 January 1954

SUSLIN, Pavel Pavlovich; ALEKSANDROV, L.A., redaktor; VOLKOVA, Ye., tekhnicheskiy redaktor.

[Manual for the ship's electrician] Posobie dlia sudovogo elektrika. 2-e izd. Moskva, Izd-vo "Morskoi transport," 1955. 345 p. (MLRA 8:9)
(Electricity on ships)

SUSLIN, Pavel Pavlovich. Prinimali uchastiye: MATVEYEV, Ye.N., kand. tekhn.nauk; FRIK, A.O., inzh., red.. SEMENOVA, S.A., red.izd-va, LAVRENOVA, N.B., tekhn.red.

[Manual for a ship electrician] Posobie dlia sudovogo elektrika. Pod red. A.O.Frika. Izd.3. Moskva, Izd-vo "Morskoi transport," 1959. 373 p. (MIRA 12:11)
(Electricity on ships) (Electric engineering)

SUSLIN, Pavel Pavlovich. Prinimal uchastiye FRIK, A.O., inzh.

[Manual for the ship electrician] Posobie dlia sudovogo elektrika. Izd. 4. Moskva, Transport, 1964. 391 p. (MIRA 18:1)

DUBOVOY, A., inzh.; SUSLIN, V., inzh.; KHOKHLOV, G., inzh.

"Electric drives on ships" by G.M.Nikitin. Reviewed by A. Dubovoi, V.Suslin, G.Khokhlov. Rech. transp. 21 no.9: 55-56 S '62. (MIRA 15:9)
(Electricity on ships) (Nikitin, G. M.)

SUSLIN, V., inzh.

Improving the economic efficiency of electric power plants on passenger motor ships. Rech.transp. 23 no.9:35-36 S '64. (MIRA 19:1)

1. Gor'kovskiy institut inzhenerov vodnogo transporta.

BELYAKOV, F.Ye.; BABIN, B.N.; BAL', V.; BOROVKOV, P.N.; VOYEVODIN, I.N.; GUREVICH, G.M.; GORBUNOVA, P.I.; KONNOV, A.S.; KALANTAROVA, M.V.; KASHIRSKIY, A.Ya.; KAZANCHEYEV, Ye.N.; LEKSUTKIN, A.F.; LETICHEVSKIY, M.A.; LOPATIN, S.Z.; MIRSKIY, V.N.; PODSEVALOV, V.N.; SUBBOTINA, V.P.; TANASIYCHUK, N.P.; FEDOTOV, S.D.; FISENKO, K.N.; EL'KIND, I.G.; BOVIN, S.S.; VASIL'YEV, L.T.; DRINKOV, V.D.; DALECHIN, N.I.; DADAGOV, I.A.; YEMMOSHINA, V.I.; ZHUKOV, I.V.; ZIMIN, D.A.; IVANNIKOV, A.Ya.; KOVALEV, M.K.; LUGAKOVSKIY, N.L.; NALEVSKIY, A.F.; SEREZHNIKOV, V.K.; SEMICHASOV, M.D.; SOKOLOV, A.V.; STEPANOV, V.I.; SAKHARIN, G.S.; SAVENKO, P.A.; SOLODOV, V.P.; UMEROV, Sh.Kh.; CHIKINDAS, G.S.; SHCHERBUKHINA, S.N.; DYNKIN, G.Z.; LYSOV, V.S.; OSHEROVICH, A.N.; ROKITSINSKIY, E.V.; BRASLAVSKIY, M.S.; RUDENKO, I.A.; ZHUKOBORSKIY, M.S.; ZHDANOV, I.Ye.; SUSLIN, V.A.; BRUS, A.Ye.; VOLYNSKIY, S.A.; KLYUYEV, V.A.; ISTRATOV, A.G.; TIKHOMIROV, I.F.; BUTYRIN, Ya.N.; VOLYNSKIY, S.A.; MINEYEV, M.F.; MAL'TSEV, V.I.; VIDETSKIY, A.F., kand.tekhn.nauk, glavnyy red.; DEMIDOV, A.N., red.; KRAVETS, A.L., red.; KLIMOVA, Z.I., tekhn.red.

[Industrial Astrakhan] Promyshlennaia Astrakhan'. Astrakhan', Izd-vo gazety "Volga," 1959. 318 p. (MIRA 12:11)

1. Astrakhan (Province) Ekonomicheskiy administrativnyy rayon. (Astrakhan Province--Economic conditions)

SAVIN, D.K., nauchn. sotr.; FRANKOVSKIY, TS.F., nauchn. sotr.; NAURUZBAYEV, S.K., nauchn. sotr.; SON, I.N., nauchn. sotr.; SUSLIN, V.D., nauchn. sotr.; MARTYUSHEV, Ye.D., nauchn. sotr.; ORLOVSKAYA, A., red.; YEGOROVA, V., red.

[Mechanization of livestock feeding] Mekhanizatsiia otkorma skota. Alma-Ata, Kainar, 1965. 237 p. (MIRA 18:7)

1. Kazakhskaya Akademiya sel'skokhozyaystvennykh nauk. Nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva. 2. Kazakhskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (for all except Orlovskaya, Yegorova).

25(0) SOV/92-58-10-21/30

AUTHOR: Suslin, V.I., Foreman

TITLE: A Composite Crew (Kompleksnaya brigada)

PERIODICAL: Neftyanik, 1958, Nr 10, pp 27-28 (USSR)

ABSTRACT: The author states that his crew consists of specialists in oil well maintenance in crude oil production. Moreover, it contains a research group and a small group specialized in extracting oil by secondary recovery methods. In addition to its principal job, this composite crew assembles, disassembles and moves hoisting equipment, wellhead equipment, pumpers, gaging tanks, etc. Among workers of this crew there are men who are able to work as welders, drivers, electricians, etc. The crew extracts oil by applying advanced techniques and takes advantage of the flow scheme introduced by Markar'yants, Chief of a department in the Petroleum and Gas Production Administration. In some deep wells the oil is aerified to stimulate the well flow.

Card 1/2

A Composite Crew

SOV/92-58-10-21/30

Hydraulic fracturing of formations, lowering of gas packers, additional perforation, and other recently developed methods are used for increasing the oil well output. However, under conditions prevailing in fields of the Gudermess Administration hydraulic fracturing does not produce satisfactory results, and further studies of its application should be made. Hydrochloric acid treatment of wells is performed rather satisfactorily, but some measures should be taken to prevent the accumulation of salt deposits in the formation because these deposits hinder the free flow of petroleum to the drill-hole. The use of gas packers of the new type brings good results. Following the suggestion of P.K. Khludnev, member of the crew in question, derricks are now assembled at the drilling site thus saving expenditures for their transportation. A number of other practical suggestions were made by several members of the crew, and as a result the 1957 production plan was overfulfilled. It is expected that still better results will be obtained in 1958.

ASSOCIATION:Gudermesskoye NPU (The Gudermes Petroleum Production Administration)

Card 2/2

SUSLIN, V.I.

Combined anchor-sonde of Khludnev's design. Neftianik 6 no.1:21-22 Ja '61. (MIRA 14:4)

1. Master kompleksnoy brigady po dobyche nefti Gudermesskogo neftepromyslovogo upravleniya.
(Oil well pumps)

SUSLIN,V.P.

Device for measuring out lime water. Rats. i izobr. predl. v stroi. no.86:22-23 '54. (MLRA 8:8)

(Plastering)

SUSLIN, V.Ya.; VLASOV, I.A.; TSYMBALOV, K.F.; TAYTS, A.A., kandidat tekhnicheskikh nauk.

Device for distributing canning jars in annealing ovens. Prom.energ. 10 no.5:10-11 My '53. (MLRA 6:5) (Glassware)

VOZIYANOV, A.F.; BUZIN, V.A.; MEL'NIKOV, V.F.; SUSLIN, Yu.V.; GEORGIYEVSKIY, V.S.

Ventilation of shielded working faces in steep seams of the Donets Basin. Trudy Inst.gor.dela AN URSR no.11:53-65 '62. (MIRA 16:2)

(Mine ventilation)

BUZIN, V.A.; SUSLIN, Yu.V.; AFANAS'YEV, V.F.

Ventilation of mine shaft bottoms. Sbor. trud. Inst. gor. dela AN URSR no.13:90-96 '63 (MIRA 17:7)

SIMONOVA, R.G., inzh.; KUDRIN, G.L., glavnyy inzhener; SUSLINA, A.I.

Manual on absorbent cotton production," by G.A. Vainshtein, Z.A. Bravyi. Reviewed by R.G. Simonova, G.L. Kudrin, A.I. Suslina. Tekst. prom. 19 no.6:86-89 Je '59. (MIRA 12:9)

1.Fabrika imeni Dvadtsatiletiya Vsesoyuznogo Leninskogo kommunisticheskogo soyuza molodezhi (for Kudrin). 2.Zaveduyushchiy khimicheskoy laboratoriyey fabriki imeni Dvadtsatiletiya Vsesoyuznogo Leninskogo kommunisticheskogo soyuza molodezhi (for Suslina).
(Cotton manufacture) (Vainshtein, G.A.)
(Bravyi, Z.A.)

L 27771-65 EPA/EWG(v)/EWT(l)/EPA(bb)-2/T-2/EWP(f) Pe-5/Pw-4 WW

ACCESSION NR: AT5003392 S/2563/64/000/232/0071/0082

24
30
21

AUTHOR: Galerkin, Yu. B.; Suslina, I. F.

...entrifugal compres-

...1964, Turbomas-

...performance, compres-
...characteristics,

TRANSLATION: ...designs of low-output, high-pressure, centrifugal compressors ...experimental data show that

...peculiarities when compared with stages having moderate to large relative ...
Additional experimental data were needed for successful and efficient designs,

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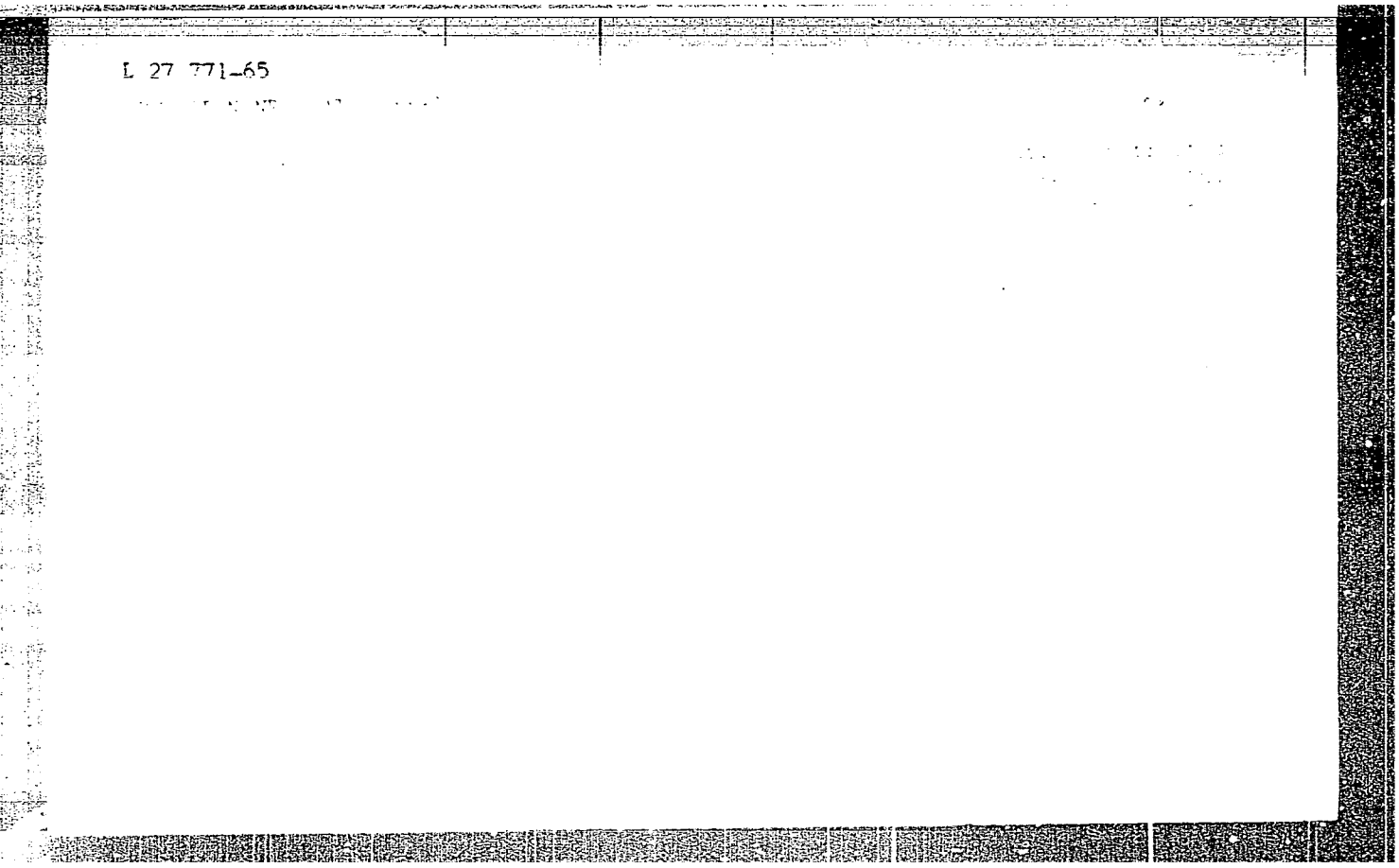

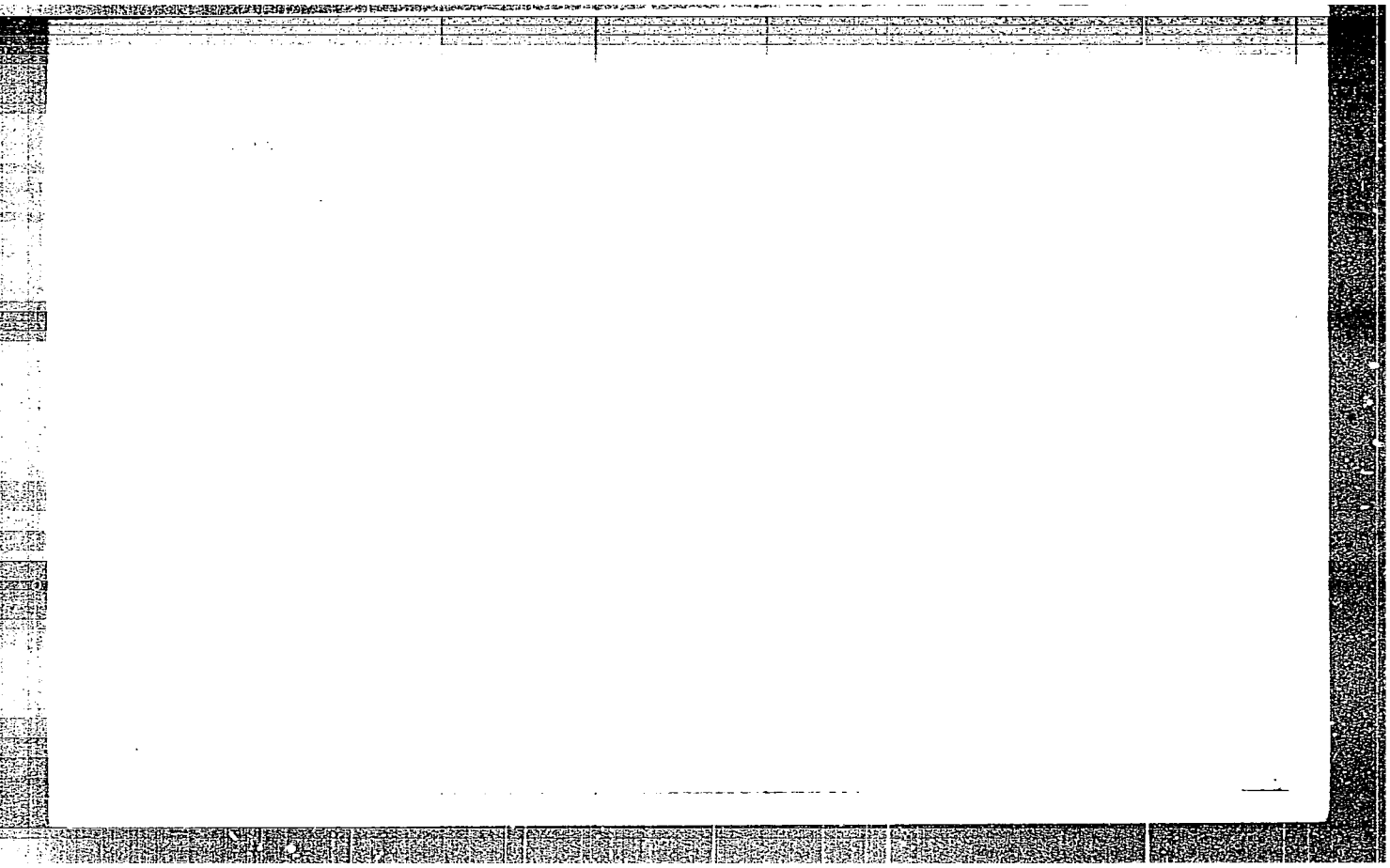

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001654010012-1"

L 27782-65 EWT(1)/EPA/EWP(f)/EWG(v)/T-2/EPA(bb)-2 Pe-5/Pw-4 WW

ACCESSION NR: AT5003394 S/2563/64/000/232/0093/0098

41
31
8+1

AUTHOR: Strizhak, L. Ya.; Suslina, I. P.; Khentalov, V. I.

TITLE: The operation of the rotor and vaneless diffusor of a high pressure low output centrifugal compressor stage

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy, no. 232, 1964. Turbomashiny (Turbomachines), 93-98

TOPIC TAGS: compressor, centrifugal compressor, Mach number, Reynolds number, compressor characteristic, compressor rotor, compressor loss, low output compressor, vaneless diffusor

ABSTRACT: During the design of 90° exit angle, high-pressure, compressors, difficulties arise due to the high values of the Mach number (M) (these exceed the difficulties encountered in the conventional rotors with 45° exit angles). High M numbers at the entrance to various elements of the compressor stage may result in increased losses within the rotor and during the conversion of the dynamic thrust within static elements. Low-output centrifugal compressor units have, on the other hand, low Reynolds numbers (Re) caused by the decrease in hydraulic diameter at low relative widths. This enhances the role played by viscosity at low

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peripheral velocities. All this made a thorough study of the influence of viscosity and compressibility on the operation of centrifugal stages necessary. The subject of this paper was the tests, representing a continuation of the previously reported studies on the influence of M and Re numbers (A. V. Vasil'yev, V. F. Kuz'min, Ya. A. Pinsker, Sb. studencheskikh nauchno-issledovatel'skikh rabot LPI, 1963, pp 5-10), carried out at the authors' laboratory. Some of the results are shown in Figs. 1 and 2 of the Enclosure, giving the characteristics of the rotor and the entire stage at various peripheral velocities, and the changes in the full thrust along the radius of the diffusor, respectively. Orig. art. has: 2 formulas and 3 figures.

ASSOCIATION: Leningradskiy politekhnicheskiy institut imeni M. I. Kalinina (Leningrad polytechnic institute)

SUB CODE: PR

SUBMITTED: [illegible]

NO REF SOV: 004

OTHER: 002

L 27782-65

ACCESSION NR: AT5003394 ENCLOSURE: 01

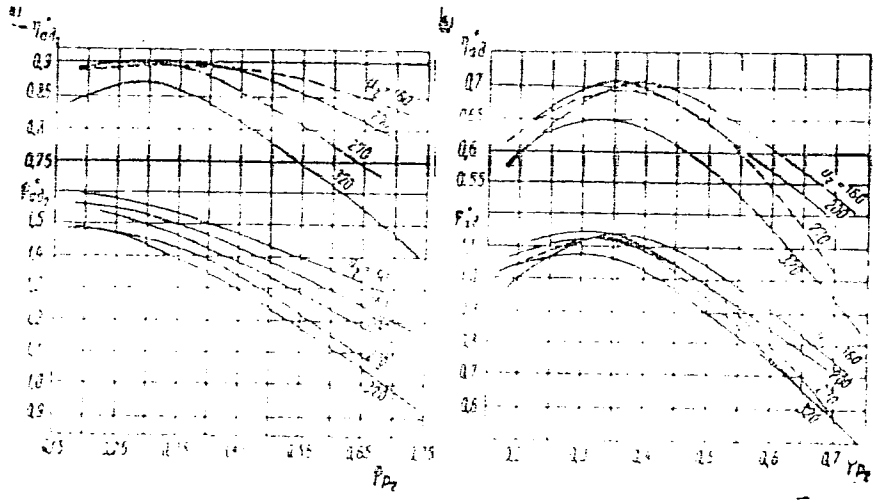

Figure 1. Characteristics of the rotor (a) and stage (b) at various peripheral velocities (u_2).

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L 27782-65

ACCESSION NR: AT5003394 ENCLOSURE: 02

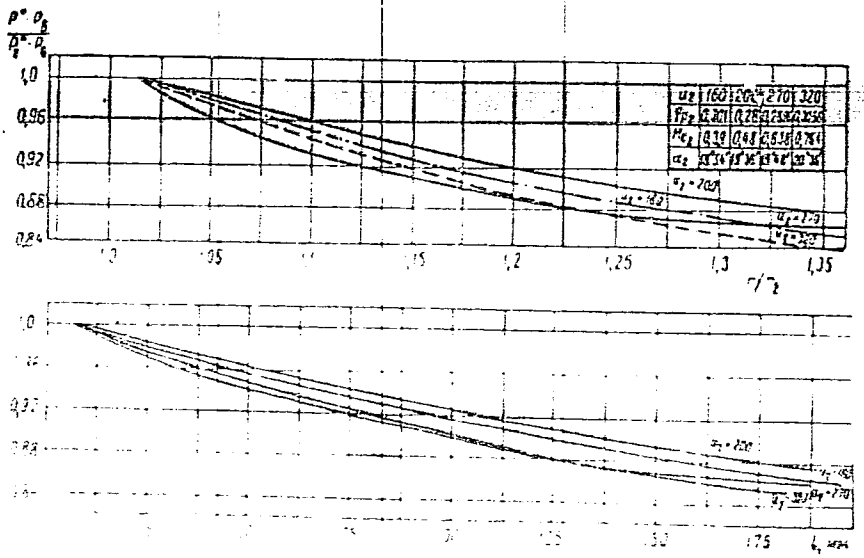

Figure 7. Change in relative full thrust along the radius of the diffusor.

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AUTHORS: Gross, E.F. and Suslina, L.G. SOV/51-6-1-24/30

TITLE: Single Crystals of ZnS and the Spectrum of Their Absorption Edge at Low Temperatures (Monokristally ZnS i spektr ikh kraya pogloshcheniya pri nizkikh temperaturakh)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 1, pp 115-117 (USSR)

ABSTRACT: Zn single crystals were produced by sublimation of very pure powder in an atmosphere of argon. This method is similar to that employed for growing of CdS monocrystals in the laboratory of S.M. Ryvkin, at the Physico-Technical Institute of the Academy of Sciences of the U.S.S.R. Sublimation was carried out in a quartz tube (1, in Fig 1) placed in an electric furnace (2, in Fig 1). A quartz boat 3 filled with ZnS was placed in the hottest part of the tube 1. This boat was heated to 1270°C. Before the electric furnace was switched on, a stream of argon was passed for 1 hour via a small tube 4. This was done to expel all air from the system. The electric furnace was switched on for 2 hours. During this time the vapours of ZnS produced from the powder were moved by a stream of argon to a quartz screen 5. ZnS single crystals were found to grow on this screen and on the tube walls near it. The single crystals were in the form of colourless plates of 25 x 5 mm area.

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Single Crystals of ZnS and the Spectrum of Their Absorption Edge at Low Temperatures

and their thickness varied from 0.1 mm to 0.1 μ. The single crystals were found to be uniaxial (hexagonal modification of ZnS) and the optical axis was found to lie in the plane of the crystal. Using crystals of various thicknesses the authors studied the absorption spectra in the region of 3300-3100 Å (Fig 2). Curves a, b, c in Fig 2 represent spectra obtained using crystals of 10, 1, 1 and 0.1 μ thickness respectively. The structure of the long-wavelength edge of absorption was found to be clearly exhibited at the liquid-helium temperature (4.2°K), as shown in Fig 2. Heating of crystals from 4.2 to 77°K and then to 20°C displaces the absorption lines towards longer wavelengths and makes them less distinct. Positions of the absorption lines near the long-wavelength edge are given in various temperatures in a table on p 117. This table lists three absorption maxima at 4.2°K and 77°K and only two such maxima at 293°K (20°C). All these maxima lie between

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Single Crystals of ZnS and the Spectrum of Their Absorption Edge at Low Temperatures

3120 and 3220 Å. Acknowledgments are made to O.A. Matveyev and L.V. Maslova for their advice on the method of growing of single crystals. There are 2 figures, 1 table and 10 references, 6 of which are Soviet, 3 English and 1 German.

SUBMITTED: July 18, 1958

Card 3/3

24(7), 24(6) SOV/51-6-4-29/29

AUTHORS: Gross, Ye.F., Novikov, B.V., Razbirin, B.S. and Suslina, L.G.

TITLE: Absorption Spectra of Crystals of Certain Gallium Chalcogenides (Spektry poglosnchcniya kristallov nekotorykh khalkogenidov galliya)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 4, pp 569-572 (USSR)

ABSTRACT: Linear structure in the long-wavelength edge of fundamental absorption was observed in the spectra of some semiconductors (Ref's 1-10). These lines were ascribed by some authors to exiton states and by others to excess of one of the components of the semiconductor or to a foreign impurity. The present paper reports an investigation of the absorption spectra of gallium sulphide and selenide crystals (GaS and GaSe) with hexagonal laminar structure and crystals of β-Ga_2S_3 and Ga_2Se_3. GaS crystals were obtained by melting together at 1000-1050°C stoichiometric amounts of gallium and sulphur in evacuated quartz ampules. Crystals of β-Ga_2S_3 were prepared similarly but at a higher temperature (1200-1250°C). Preparation of GaSe and Ga_2Se_3 (cubic symmetry) was described by Goryunova et al (Ref 13). GaS and GaSe were used in the form of monocrystals of thicknesses varying from several microns to 100 μ. Ga_2S_3 and Ga_2Se_3 were 50-100 μ thick. Structure in the fundamental absorption edge was observed in the spectra of GaS and GaSe at 77°K (Figs 1a and 2a respectively). Such structure was also visible in the

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Absorption Spectra of Crystals of Certain Gallium Chalcogenides

absorption spectrum of GaSe at room temperature. In contrast to GaS and GaSe, no structure was observed in the fundamental absorption edges of Ga_2S_3 and Ga_2Se_3 either at room temperature or at 77°K (Figs 1б and 2б). The absence of structure in the absorption spectra of β-Ga_2S_3 and Ga_2Se_3 is probably due to a large number of randomly distributed imperfections in these crystals. Such imperfections impede formation and migration of excitons and consequently the exciton lifetime is very short. Under such conditions the exciton structure of the absorption bands may be very diffuse or it may disappear altogether. From the absorption spectra the authors deduced the energy gaps in these semiconductors. A table on p 571 lists the values of the energy gaps so deduced at 290°K (col 2) and 77°K (col 3). These values agree satisfactorily with those deduced from photoelectric measurements at room temperature, which are listed in col 3. Acknowledgments are made to N.A. Goryunova for supply of GaSe and Ga_2Se_3 and for advice on preparation of GaS and Ga_2S_3 crystals. There are 2 figures, 1 table and 17 references, 10 of which are Soviet, 5 French and 2 German.

SUBMITTED: November 27, 1958

Card 2/2

USCOMM-DC-60,717

S/051/60/008/04/014/032
E201/E691

AUTHORS: Gross, Yu.F., Suslina, L.G. and Komarovskikh, K.F.

TITLE: Investigation of the Absorption Spectra of Zinc Sulphide Crystals

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 4, pp 516-520 (USSR)

ABSTRACT: The paper deals with polarization of the line structure of the absorption edge of hexagonal ZnS monocrystals at 4.2 and 77°K and with the absorption spectra of sublimated polycrystalline ZnS films. Monocrystals of ZnS were grown in the authors' laboratory by sublimation of ZnS powder in a neutral atmosphere (Ref 2). To avoid the effect of deformations on the absorption spectrum, the monocrystals were attached to substrates at one end only, the other end remaining free. The spectra were obtained at 77 and 4.2°K in polarized and natural ultraviolet light using a quartz spectrograph Q-12 (25 Å/mm linear dispersion in the 3200 Å region). The line structure of the absorption edge of ZnS monocrystals was found to be polarized (Fig 1). At 4.2°K the 3205 Å line was completely polarized with its electric vector at right angles to the optical axis of the crystal (E ⊥ c), i.e. it could be represented by a plane absorption

Card 1/3

Investigation of the Absorption Spectra of Zinc Sulphide Crystals

oscillator. The 3180 Å line was unpolarized or slightly polarized and the 3115 Å line was strongly polarized with E ∥ c (the absorption oscillator close to a linear electric dipole). The nature of polarization of the spectrum of ZnS monocrystals is similar to polarization found in other uniaxial crystals with discrete structure of the absorption edge (Refs 4-6). Thin crystals (d~0.1 μ) were found to stick to the base and the consequent deformation produced displacement of the absorption lines (Table 1), as well as broadening (the 3205 Å line). The absorption spectra of some "free" crystals were also found to be displaced by 1-2 Å due to internal stresses produced during growth of the monocrystals or due to differences in attachment to the bases. The authors investigated also the absorption spectra (Fig 2) of polycrystalline ZnS films produced by sublimation in vacuo. At 4.2°K the following absorption lines were observed (the widths are given in brackets): 3212 Å (10 Å), 3190 Å (10 Å), 3128 Å (20 Å); all these are shown in Fig 2a. In some films a weak line at 3271 Å (20 Å width) could be seen (Fig 2δ). The positions of the absorption lines in polycrystalline ZnS films at 4.2 and 77°K are listed in Table 2.

Card 2/3 Comparison of the data in Tables 1 and 2 shows that the positions and

S/051/60/008/04/014/032
E201/E691

Investigation of the Absorption Spectra of Zinc Sulphide Crystals

widths of the absorption lines of polycrystalline films are close to the positions and widths of ZnS monocrystals stuck to substrates. It follows that the films have hexagonal structure. The 3212, 3190 and 3128 Å lines of the ZnS films and the corresponding lines in the spectra of monocrystals are the lines of the lattice itself (exciton excitation). The 3271 Å line of ZnS films is due to lattice defects (for example excitation of "impurity" excitons in the defective regions). There are 2 figures, 2 tables and 9 references, 8 of which are Soviet and 1 English.

SUBMITTED: August 13, 1959

Card 3/3

22187

S/048/61/025/004/036/048
B117/B212

24,7400
24,3500

AUTHORS: Gross, Ye. F. and Suslina, L. G.

TITLE: Investigation of the absorption and the luminescence of ZnS and ZnSe single crystals

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 532-533

TEXT: The present paper has been read at the 9th Conference on Luminescence (crystal phosphors). The authors have investigated the absorption, reflection, and luminescence spectra of ZnS and ZnSe single crystals near the long-wave edge of the principal absorption at temperatures of liquid helium. ZnS and ZnSe single crystals have been obtained in form of plates by sublimation of powder in a neutral gas medium. They belong to the hexagonal modification with a sixfold axis in the plate plane. The maximum dimensions of the crystals are: ZnS - 25 x 5 x 0.1 mm and ZnSe - 7 x 1.5 x 0.1 mm. The spectra have been studied at T = 4.2 ^{o}K in polarized light from photographs of samples of various thicknesses. It has been found that the long-wave edge of the self-absorption of ZnS

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S/048/61/025/004/036/048
B117/B212

Investigation of the...

and ZnSe single crystals has a complicated structure and shows several small, intensive, polarized absorption lines at T = 4.2°K. A line luminescence has been observed at the absorption edge of both crystals. Between the short-wave emission lines and the long-wave absorption line a resonance has been established. The relative distribution, the polarization, and the width of the lines are very similar in absorption spectra of isomorphous ZnS and ZnSe crystals. Considering the position of the absorption edge, the stability and the high absorption coefficient ($\sim 10^4 \div 10^5$ cm^{-1}) it can be assumed that the established absorption caused by the structure is due to the absorption of the basic substance in the lattice, i.e., the formation of excitons. The luminescence spectrum of ZnS has been obtained from fine-crystalline powder at 77.3°K. At T = 4.2°K, an intensive line structure has been found in the luminescence spectra of ZnSe single crystals. An equidistant band group which can be found in a number of oxyde and sulfide crystals is found here. The gap between equidistant bands ($\Delta\nu \sim 260$ cm^{-1}) corresponds in magnitude to the lattice vibration energy of ZnS. Taking into account that there is a resonance between the short-wave luminescence lines of

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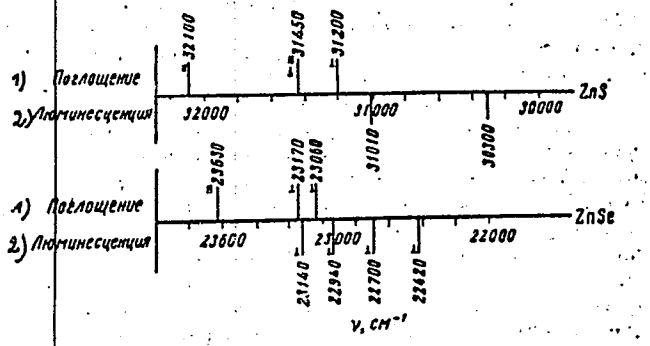
Investigation of the...

ZnS and ZnSe and their long-wave absorption lines, it has to be assumed that the line emission of crystals has to be referred to the exciton annihilation in the lattice at light emission. The figure shows schematically the position of the absorption and luminescence band centers and their polarization in ZnS and ZnSe crystal spectra. [Abstracter's note: Essentially complete translation]. There is 1 figure.



Legend to the figure:
1) Absorption;
2) luminescence.

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34232
S/181/62/004/002/015/051
B102/B138

24.3500 (1137, 1138, 1144)

AUTHORS: Gross, Ye. F., Suslina, L. G., and Kon'kov, P. A.

TITLE: Exciton spectrum of hexagonal ZnSe single crystals

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 396-400

TEXT: Exciton absorption and reflection spectra were studied at 4.2°K on ZnSe plates with a maximum area of 10 mm^2 and depths ranging from a few to some tens of microns thick. They were obtained by evaporating ZnSe powder in an argon atmosphere. The measurements were carried out in polarized light with an ИСП-28 (ISP-28) spectrograph with linear dispersion of 45 Å/mm in the 4350 Å range, and an ИСП-51 (ISP-51) with 25 Å/mm dispersion in the same range. The absorption coefficient was 10^5-10^6 cm^{-1}. For E⊥c the absorption edge was 4356 Å, for E∥c at 4292Å. The absorption line (A) with maximum at 4335 Å and ~10 Å in width is in the extraordinary ray, and is intensified as the angle between E and c increases. It was studied in detail. With an $\hat{Ec}$ angle of up to 30-35° a side line (B) appears with 4311 Å, which has the same polariza-

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Exciton spectrum of hexagonal ZnSe ...

tion. The same effect of extraordinary-ray line intensification when rotating the crystal was observed with CdS, CdSe, ZnS and HgI_2. The reflection spectrum for E ∥ c has a peak at 4242 Å, a dip at 4232 Å. Chang Kuang-yin has observed this line (C) at 4227 Å. This value is taken to be correct. The ZnSe exciton spectrum is confronted with theoretical results and with results for ZnS at 4.2°K:

Position and polarization of exciton lines

ZnS	Polarization	ZnSe	Polarization
3205 Å	E ⊥ c	4335 Å	E ⊥ c
3180	-	4311	E ⊥ c
3115	E ∥ c	3237	E ∥ c

The energies of valence band splitting, E_{AB} and E_{AC}, were also determined and compared with those of ZnS (Table2). G. A. Zholkevich (Uch. zap. Volgodsk. ped. inst. 23, 103, 1958), B. S. Razbirin and V. I. Safarov (FTT, 2, 2954, 1960) are mentioned. There are 3 figures, 2 tables, and

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Exciton spectrum of hexagonal ZnSe ...

17 references: 9 Soviet and 8 non-Soviet. The four most recent references to English-language publications read as follows: D. G. Thomas, J. J. Hopfield. Phys. Rev. 116, 573, 1959; J. L. Birman. Phys. Rev. Lett., 2, 157, 1959; J. J. Hopfield. J. Phys. Chem. Sol., 15, 97, 1960; D. G. Thomas. J. Phys. Chem. Sol. 15, 86, 1960.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: August 16, 1961

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S/181/62/004/012/051/052
B125/B102

24,3570

AUTHORS: Gross, Ye. F., and Suslina, L. G.

TITLE: The emission spectrum of hexagonal ZnSe single crystals

PERIODICAL: Fizika tverdogo tela, v. 4, no. 12, 1962, 3677-3680

TEXT: The "edge-emission" (emission on the long-wave side of the fundamental absorption edge) from hexagonal monocrystalline plates and from coarse crystalline sinters and powders of ZnSe, is described for the exciton structure of the ZnSe absorption investigated earlier (Ye. F. Gross et al., FTT, 4, 396, 1962). A similar edge emission (i.e. a series of narrow emission lines) from a fair number of oxide and sulfide crystals (ZnS, ZnO, CdS and others) has been observed by F. A. Kroeger (Physica, 7, 4, 1940) and other workers. The emission spectra excited by light in the range of selfabsorption of ZnSe at 77°K and 4.2°K have been photographed using a ИСП-51 (ISP-51) spectrograph with linear dispersion. The excited ZnSe-monocrystals glow light green at low temperatures. All spectral lines of the ZnSe-monocrystals with a Wurtzite-structure are polarized normal to the optical axis at T = 4.2°K.

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The emission spectrum of...

The first and very intensive emission line of such a spectrum with a maximum λ4326 Å is located among the first very long-wave absorption lines with 4335 and 4311 Å. The intensities of the equidistant line series 4361, 4405, 4454, 4501 Å decrease with increasing wave length. The position of emission lines of different monocrystalline samples differs by several Å as a result of some inner deformations. The equidistant series of various samples mentioned can contain various numbers of lines. Powders and coarse crystalline sinters display the most intensive equidistant luminescence and also the most numerous equidistant lines. At 4.2°K there is a green band at 5150 Å (causing the luminescence observed) and there is a red band at 6000 Å. If the temperature is raised to 77°K the equidistant series disappears, the strong emission line at 4326 Å is shifted to 4320 Å, and the "red" and "green" bands become more smeared out, showing a red shift. The frequency of 240 cm^{-1} observed belongs to the longitudinal oscillations of the ZnSe-lattice. The transverse frequencies of CdS (Wurtzite-structure), ZnSe (sphalerite-structure) and CdSe (Wurtzite-structure) amount to 260, 215-218 and 185 cm^{-1}. The longitudinal frequencies of CdS, ZnSe and CdSe (all having a Wurtzite-structure) amount to 300, 240, and 213 cm^{-1}. The

The emission spectrum of...

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B125/B102

present authors established a far reaching analogy between the absorption spectra of ZnO and those of ZnSe. There are 1 figure and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: August 31, 1962

Card 3/3

S/181/63/005/003/016/046
B102/B180

AUTHORS: Gross, Ye. F., Suslina, L. G., and Livshits, A. I.

TITLE: Reflection and luminescence of zinc telluride single crystals

PERIODICAL: Fizika tverdogo tela, v. 5, no. 3, 1963, 801-806

TEXT: This is the third paper in a series of studies of the optical properties of ZnS - ZnSe - ZnTe crystals (Opt. i spektr., 8, 516, 1960; FTT, 4, 396, 1962); it describes investigations made in the visible and ultraviolet ranges at 293, 77 and 4.2°K, including also luminescence at 4.2°K. For the reflection spectra a ISP-51 (ISP-51) spectrograph was used for the visible and a Q-12 for the UV ranges. At 77°K a narrow reflection peak was observed at 5236.3±0.3 Å (2.3675 ev) which, at 4.2°K, shifted to 5209.3±0.1Å (2.3798 ev). At room temperature only two broad diffuse maxima were found, one at 3600±50 Å (3.44 ev), the other at 3100±50 Å (4.00 ev). Which at 77°K, these maxima shifted to shorter waves (3330±5 and 2865±3 Å) and narrowed considerably from 2700 to 230 cm^{-1}, and from 2000 to 140 cm^{-1}. The 5236.3Å peak is attributed to

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direct transitions exciton states connected with extrema, at $\vec{k}=0$ (Γ-point), of the lower conduction and the upper valence bands; 3330 and 2865 Å to direct transitions to exciton states connected with extrema of the two valence bands and the conduction band, lying at $\vec{k} \parallel \langle 111 \rangle$ at the edge of the Brillouin zone (L-point). The luminescence spectrum observed differed somewhat from that of D. G. Thomas et al. (Phys. Rev. Lett., 8, 391, 1962; Phys. Rev., Ser. II, 122, 1382, 1961). Luminescence was excited by irradiation in the self-absorption band and was taken on the ISP-51 spectrograph. The three types of ZnTe crystal (I, II, III) investigated have different types of spectra due to different types of luminescence centers. I has a spectrum similar to CdS; it has a narrow line at 5222 Å, a group of lines in the range 5240-5500Å and several bands at λ, 5536Å. II has a simpler spectrum consisting of 9 - 10 equidistant triplets. Type III was studied in greatest detail; it consists of narrow lines of different intensity; a faint line at 5222Å, a group of equidistant intense lines at 5288Å, and other groups at 5316, 5452, 5528, 5619, and 5834 Å. Common to all types of crystals are the 5222 Å (exciton) line and the presence of line groups whose intensity decreases

toward the red side of the spectrum. The lines of these groups are equidistant (~0.026 ev) and are attributed to longitudinal lattice vibrations. There are 10 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: October 4, 1962

L 1204-65 EWT(l)/EWT(m)/EPF(b)-2/EWP(t)/EWP(b) IJP(c)/RSD/SSD(c)/ASD(a)-5/
AS(mp)-2/APWL/RAEM(a)/RAEM(l)/APGC(b)/RAEM(j)/ESD(gs)/ESD(t) RDW/JD

ACCESSION NR: AP5000670 S/0181/64/006/012/3684/3690

AUTHORS: Gross, Ye. F.; Suslina, L. G.

TITLE: Mirror symmetry of absorption and luminescence spectra of ZnTe crystals

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3684-3690

TOPIC TAGS: absorption spectrum, luminescence spectrum, single crystal, zinc alloy, spectrum analysis

ABSTRACT: The authors investigated the narrow-line absorption and luminescence spectrum of the cubic modification of single-crystal ZnTe (sphalerite). The tests were made at 4.2K. The luminescence and absorption spectra were studied photographically using an ISP-51 spectrograph with a linear dispersion of 18 Å/mm in the 5400 Å region. To investigate the intensity and the temperature dependence of the emission lines, an ISP-51 spectrograph was used in conjunc-

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